ABSTRACT

LOW POWER INTEGRATING CIRCUIT FOR USE WITH A PHOTODETECTOR AND OPTICAL SENSOR INCLUDING SUCH AN INTEGRATING CIRCUIT

There is described an integrating circuit (20) for use with a photodetector (10) and an optical sensor (1) including such an integrating circuit. The integrating circuit comprises an operational amplifier (30) having a non-inverting input (32) connected to a non-zero bias voltage ($V_{PD\text{-}BIAS}$), an inverting input (31) coupled to the photodetector (10), and at least one output (33). This integrating circuit further includes an integrating voltage storage device (25) having a first terminal coupled to the operational amplifier output and a second terminal coupled to the operational amplifier inverting input, and switching circuitry for controlling timing of the integrating circuit and switching the integrating circuit between a reset phase and an integration phase. The switching circuitry includes means (51, 52) for balancing the operational amplifier and developing a voltage across the integrating voltage storage device during the reset phase, which voltage is substantially equal to the bias voltage, the first terminal of the integrating voltage storage device being pulled to a reference potential (V_{SS}) during this reset phase.

Figure 1